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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/520,367	01/06/2005	Thomas Buntin Threewitt	PPD 50705	5091

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SYNGENTA CROP PROTECTION, INC.
PATENT AND TRADEMARK DEPARTMENT
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GREENSBORO, NC 27409

EXAMINER

SOROUGH, ALI

ART UNIT	PAPER NUMBER
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1616

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/15/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/520,367

Applicant(s)

THREEWITT ET AL.

Examiner

Ali Soroush

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 November 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Acknowledgement of Receipt

Receipt of the Applicant's Response and Amendment, which was filed on November 29, 2006, in response to the Official Office Action mailed on August 29, 2006, is acknowledged.

Status of Claims

Claims 1 was amended, and claims 5-8 were newly added by the Amendment filed on November 29, 2006. Claim 4 was canceled by the Amendment filed January 06, 2005. As a result claims 1-3 and 5-8 are currently pending and therefore examined herein on the merits for patentability.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-3 and 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cornes (International Application published under PCT WO 02/100173; published December 19, 2002) in view of Kent et al. (Technology of Cereals; published 1994).

Applicant Claims

Applicants claim a process for reducing injury to a crop of sorghum from application of mesotrione by applying mesotrione and a second herbicide (prosulfuron, dicamba, 2,4-D, halosulfuron-methyl or quinclorac) to the locus of pre-emergent or post-emergent weeds or crops. This application is done at a rate of 50 to 300g/ha mesotrione and a relative ratio of 0.5% to 400% mesotrione to the second herbicide.

Determination of the Scope and Content of the Prior Art (MPEP §2141.01)

Cornes teaches "a **synergistic herbicidal composition comprising; (A) mesotrione, and: (B) a second herbicide selected from; ... (B5) dicamba ... or their herbicidally effective salts.**" (See page 10, Claim 1). Cornes further teaches, "The object of the formulation is to **apply the compositions to the locus where control is desired**

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by a convenient method. The **'locus' is intended to include soil, seeds and seedlings**, as well as **established vegetation**. The **composition can be used over a wide range of crops**, such as **corn (maize), wheat, rice**, potato or sugarbeet. Suitable crops include those which are tolerant to one or more of components (A) or (B), or to any other herbicide, such as glyphosate that can be additionally included in the composition." (See page 5, Lines 20-26). Cornes also teaches "a herbicidal composition according to claim 3, wherein the **weight ratio of component (A) to component (B) is between about 8:1 and 1:15**." (See page 11, claims 4). Cornes further teaches, "... the composition contains components (A) and (B) in relative amounts sufficient to **provide an application rate of at least 1.0 kg/ha, of which component (A) provides at least 0.02 kg/ha**." (See page 5, Lines 13-14).

Ascertainment of the Difference Between Scope the Prior Art and the Claims
(MPEP §2141.012)

The difference between the instant claims and Cornes is that Cornes does not teach the use of the composition on sorghum. However, it is known in the prior art that mesotrione and dicamba have been used to treat cereal crops of which sorghum is a cereal crop. It is for that reason that the examiner joins Kent et al. with Cornes.

Finding of Prima Facie Obviousness Rational and Motivation
(MPEP §2142-2143)

Kent et al discloses, "The principal **cereal crops are wheat**, barley, oats, rye, **rice, maize, sorghum**, and the millets" (See page 1, paragraph 1). It would have been obvious to one having ordinary skill in the art to modify the invention of Cornes to include the sorghum crop. With regard to the application rate of mesotrione, Cornes

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discloses an application rate, which encompasses the instant rate of 50- 300 g/ha as recited in the claimed invention. In the absence of showing of the criticality of the narrower application rate disclosed in the instant invention, Cornes makes obvious the instant application rate. With regard to the amount of component B (dicamba) amounting to 0.5 – 400% of the amount of the total composition being applied to the cereal crop, an artisan would have been expected to determine the optimum amounts of B to be applied. In addition, the amounts of component B being applied in Cornes very well cover the instant amount (0.5 – 400%) since through routine experimentation of Cornes' invention can lead an artisan arriving at the instant percent of component B being applied. One would have been motivated to do this in order to develop a method that would have been effective in controlling weeds in crop while not being detrimental to crop growth. In regards to the process being used to reduce injury to the crop from the use of mesotrione, this would be an inherent property of the composition. The examiner respectfully points out the following from MPEP 2112: "The discovery of a previously unappreciated property of a prior art composition, or of a scientific explanation for the prior art's functioning, does not render the old composition patentably new to the discoverer." *Atlas Powder Co. v. Ireco Inc.*, 190 F.3d 1342, 1347, 51 USPQ2d 1943, 1947 (Fed. Cir. 1999). Thus the claiming of a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. *In re Best*, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977). In *In re Crish*, 393 F.3d 1253, 1258, 73 USPQ2d 1364, 1368 (Fed. Cir. 2004), the court stated that "just as the discovery of properties of a known material does

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not make it novel, the identification and characterization of a prior art material also does not make it novel.” In regards to the herbicides being applied to the weeds and the crop locus Cornes teaches, “**apply the compositions to the locus where control is desired**”. This teaching implies that that the herbicides would be useful in application to the weeds and the crop for controlling growth of undesirable vegetation. In regards to the application of the herbicides to post- or pre-emergent crops Cornes teaches, “**locus’ is intended to include soil, seeds and seedlings, as well as established vegetation**”. This teaching implies that the herbicides can be applied to pre-emergent crops (seeds and seedlings) and also can be applied to the post-emergent crops (established vegetation). Finally, in regards to the application of the herbicides sequentially Cornes also makes this obvious. It would have been obvious to one skilled in the art at the time of the invention that the components of the composition taught by Cornes could also be added sequentially because each is an herbicide in its own right. It would also be obvious that the application of mesotrione would occur first because Cornes teaches this herbicide to be the primary component of the composition. For the foregoing reasons the instantly claimed invention is made obvious.

Examiner's Response to Applicant's Remarks

Although Applicants' arguments as set forth in the aforementioned Response have been fully considered in light of the claims as currently amended, they are not persuasive. Applicant's claim amendment to claim 1 and newly added claims 5-8 necessitated the new grounds of rejection as set forth hereinabove.

35 U.S.C. 103(a) rejection of claims 1-3 based on Cornes patent in view of Kent et al.

Applicant argues on page 4 of the aforementioned response, that the Applicant's composition is novel in that the second herbicide (prosulfuron, dicamba, 2,4-D, halosulfuron-methyl, or quiclorac) acts as a "safener" for mesotrione use in sorghum. In response to Applicant's arguments, Cornes teaches the same composition as that claimed by the applicant and therefore all properties known or unknown are inherent to such a composition. The examiner respectfully points out the following from MPEP 2112: "The discovery of a previously unappreciated property of a prior art composition, or of a scientific explanation for the prior art's functioning, does not render the old composition patentably new to the discoverer." *Atlas Powder Co. v. Ireco Inc.*, 190 F.3d 1342, 1347, 51 USPQ2d 1943, 1947 (Fed. Cir. 1999). Thus the claiming of a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. *In re Best*, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977). In *In re Crish*, 393 F.3d 1253, 1258, 73 USPQ2d 1364, 1368 (Fed. Cir. 2004), the court stated that "just as the discovery of properties of a known material does not make it novel, the identification and characterization of a prior art material also does not make it novel."

Applicant argues on page 5 of the aforementioned response, that Applicant's composition is intended for use in sorghum crop and that teaching of Cornes is deficient in this respect. Applicant further argues that the teachings in Kent et al. does not provide for motivation to combine the two teachings. In response to Applicant's

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arguments, Cornes teaches the use of the composition on corn, wheat, and rice, which by definition of Kent et al. are crop cereals. Therefore, Cornes has made obvious that the use of a composition comprising mesotrione and a second herbicide (dicamba) on the genus, cereal crops, would have made the use of said composition on any species of the genus including sorghum obvious.

35 U.S.C. 103(a) rejection of claims 1-3 based on Hacker et al. patent in view of Kent et al.

Applicant argues on page 5 of the aforementioned response, that Hacker et al. does not teach the presently claimed invention and further teaches away from the claimed invention because it exemplifies *Sorghum spp.* as weed species. In response to the Applicants argument, Hacker et al. teaches a composition that can contain a number of herbicides including a glyphosphate and further at least one of but also more than one of mesotrione, prosulfuron, 2,4-D, and/or dicamba. This necessarily encompasses a composition comprising glyphosphate with mesotrione, dicamba, prosulfuron, and 2,4-D to be applied to cereal crops in controlling harmful plants (See claim 1 of Hacker et al.). In regards to the invention of Hacker et al. teaching away from the instantly claimed invention because Hacker et al. exemplifies *Sorghum spp.* as weed species, Hacker et al. teaches that such a weed is controlled by the composition taught in Hacker et al. but that the composition is applied to cereal crop. The teaching of application of the composition on the genus, cereal crops, would have made the use of said composition on any species of the genus including sorghum obvious.

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Applicant argues on page 6 of the aforementioned response, that the instantly claimed invention provided unexpected results. Specifically, as indicated in tables 1 and 2 of the present application, the use of mesotrione along with one or more specific second compound reduces the damage to sorghum by mesotrione alone. In *In re Papesch*, 315 F.2d 381, 137 USPQ 43 (CCPA 1963), the court held, "From the standpoint of patent law, a compound and all of its properties are inseparable; they are one and the same thing." 315 F.2d at 391, 137 USPQ at 51. Under the *Papesch* doctrine, evidence of unobvious or unexpected advantageous properties may rebut a *prima facie* case of obviousness based on structural similarities. *Id.* at 386-87, 137 USPQ at 48. Such evidence may include data showing that a compound is unexpectedly superior in a property it shares with prior art compounds. *E.g.*, *In re Lunsford*, 357 F.2d 380, 148 USPQ 716 (CCPA 1966). Cornes teaches specifically the composition, mesotrione with a second herbicide, as claimed in the instant invention. Therefore, for a proper declaration of unexpected results Applicant must show data in which the composition is tested on a species of cereal crop disclosed in the prior art, such as rice, maize, etc. The evidence provided in the specification (table 1 and table 2) shows a comparison between a composition of mesotrione lacking a second herbicide and compositions of mesotrione with a second herbicide, which is insufficient to rebut the *prima facie* case of obviousness.

35 U.S.C. 112, first and second paragraph, rejection of claims 1-3 for the reasons given on page 2-3 of the Official Office Action mailed on 08/29/2006.

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Applicant argues on page 4 of the aforementioned response, that the Applicant's amendment in said response overcomes the 112, first and second paragraph, rejection. In response to Applicant's arguments, examiner concedes that the rejection is overcome by the amendment and no new matter is presented. Therefore, the 112, first and second paragraph, rejection is withdrawn.

Applicant's claim amendments necessitated the new grounds of rejection presented in this Official Office Action. Accordingly, **this Action is made final**. See MPEP 706.07(a). Applicant is reminded of the extension of time policy set forth in 37 CFR 1.136(a).

Conclusion

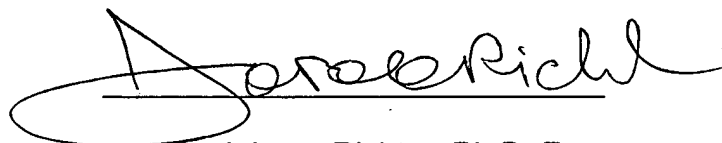
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ali Soroush whose telephone number is (571) 272-9925. The examiner can normally be reached on Monday through Thursday 8:30am to 5:00pm E.S.T.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on (571) 272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Ali Soroush
Patent Examiner
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A handwritten signature in black ink, appearing to read "Johann Richter", is written over a horizontal line. The signature is stylized with a large, looped initial "J".

Johann Richter, Ph.D. Esq.
Supervisory Patent Examiner
Technology Center 1600